

## Eradicate cancer stem cells, eradicate drug-resistant leukemia

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Markus Müschen/UCSF

CIRM grantees at the University of California San Francisco have found the protein certain leukemia cells use to evade chemotherapy. A press release from UCSF says:

“Doctors who treat children with the most common form of childhood cancer â acute lymphoblastic leukemia â are often baffled at how bulk cancer cells die from chemotherapy whereas the rare stem cells in cancer survive their best efforts and the most powerful modern cancer drugs. Months after a seemingly successful treatment, the cancer stem cells re-initiate the disease, which is then more resistant to treatment than before.

It turns out the resistant cancer stem cells make a protein called BCL6, which protects them from the effects of chemotherapy. In a *Nature* paper published today, the team tested an experimental drug called RI-BPI, which attacks cells that make BCL6. Combined with the drug Gleevac, which is very effective at destroying the non-BCL6 cells, the experimental drug could effectively cure mice with drug resistant leukemia. In the release, CIRM grantee and senior author Markus Müschen said:

“We believe this discovery is of immediate relevance to patient care.”

In the work reported in this paper, the team used a molecule to block BCL6 that, though effective for small scale use, would be difficult to mass produce. Müschen has a CIRM Early Translational II Award to develop a drug that is similarly effective at destroying drug-resistant leukemia cells but that would be easier to mass produce for widespread use.

We have more information about cancer stem cells on our website:

- Leukemia information
- Cancer stem cell video

*Nature*, May 18, 2011

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